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# L HAMILTON COLISEUM ECONOMIC FEASIBILITY STUDY

## Capital And Operating Cost Analysis

MOFFAT MOFFAT & KINOSHITA  
ARCHITECTS AND PLANNERS



October 22, 1976

Mr. J.C. Lewis  
Secretary, Board of Directors  
Hamilton City Hall  
71 Main St., 2nd Fl.  
Hamilton, Ontario  
L8N 3P4

Re: Proposed Hamilton Coliseum  
Sports, Entertainment, etc.

Dear Mr. Lewis:

## HAMILTON COLISEUM

## ECONOMIC FEASIBILITY STUDY

### Part 1

### Capital & Operating Cost Analysis

Submitted October 22, 1976

MOFFAT MOFFAT & KINOSHITA

Architects & Planners





October 22, 1976

Mr. J.R. Jones  
Secretary, Board of Control  
Hamilton City Hall  
71 Main St. West  
Hamilton, Ontario  
L8N 3T4

Re Proposed Hamilton Coliseum  
Economic Feasibility Study

Dear Mr. Jones:

The first part of our Report is included in this submission, as per the instructions of the Hamilton City Council passed on Tuesday, October 12, 1976.

Due to the extremely limited time available to complete the first phase, we have included only essential data on Capital and Operating Costs, and the range we feel these costs should fall within for the proposed Hamilton Coliseum Project.

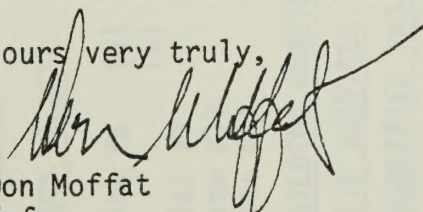
As discussed, the operating costs may be adjusted in our final submission to reflect the variable operating costs associated with the staging of specific events in the Coliseum.

A considerable amount of valuable information on Capital and Operating Costs, has been obtained through our surveys of existing coliseums. This information will be included in our final Report which will include the study of Potential Revenues.

The completion of this phase of our Report would not have been possible without the considerable amount of data already gathered by civic officials, and their cooperation with us on a moment's notice. We are extremely indebted to them for this cooperation.

We would be pleased to discuss any aspect of this phase of our Report with the Board of Control.

Yours very truly,

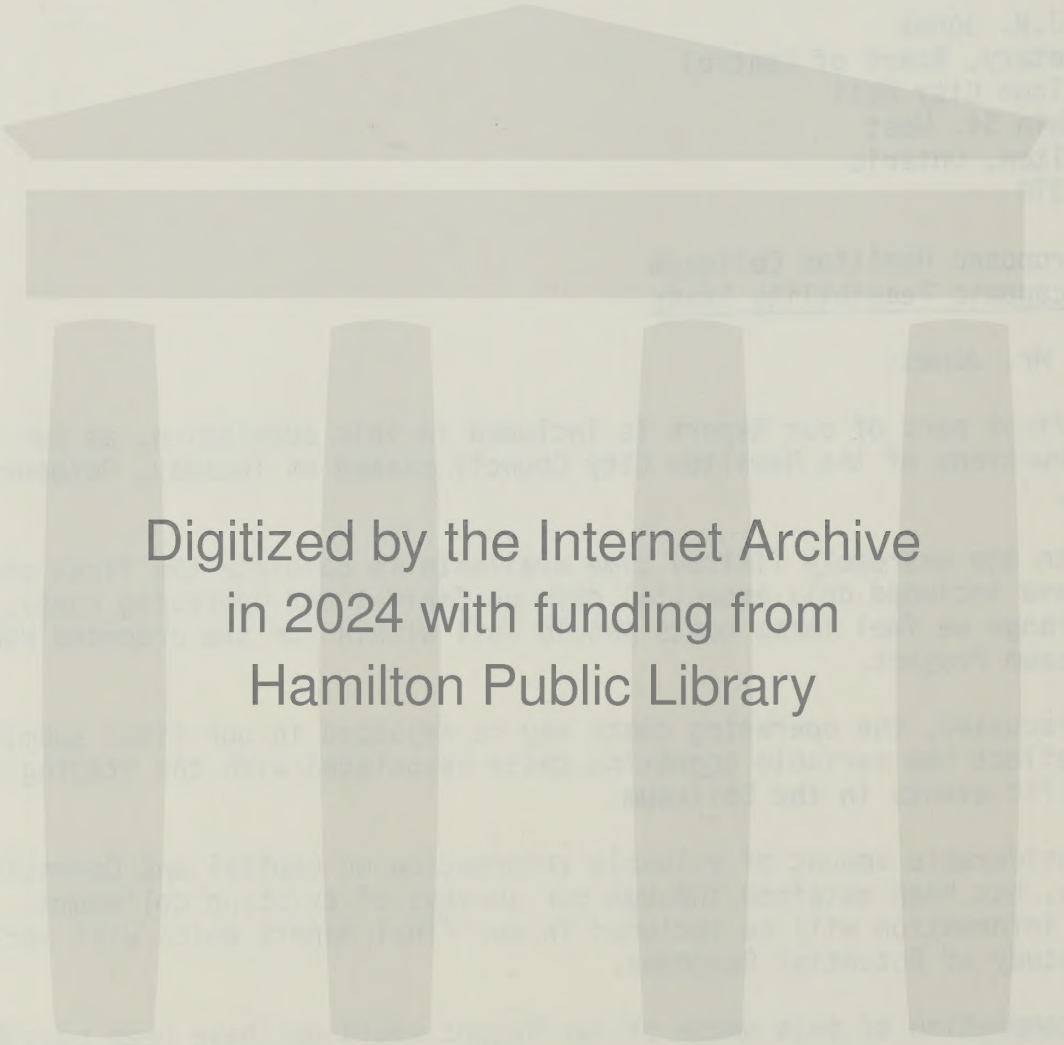
  
Don Moffat  
/mf

*Partners*

D. O. Moffat, B.Arch., M.R.A.I.C.  
G. Kinoshita, M.Arch., M.R.A.I.C.

*Associates*

D. C. Robertson, B.Arch., M.R.A.I.C.  
W. J. Kernohan, B.Arch., M.R.A.I.C.  
D. K. Tanaka, B.Arch., M.R.A.I.C.



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# RANGE OF CAPITAL AND OPERATING COSTS

## CAPITAL COSTS

### 1. LAND VALUES

Site #6	(a)	\$3,400,000	
	(b)	\$ 175,000	(possible purchase price)
Site #7		\$4,759,000	
Site #13		\$8,275,000	
Site #14		\$6,600,000	
2. <u>BUILDING CONSTRUCTION COST</u>	(Start Nov. 1/76- complete 18 months later)		
3. <u>SITE SERVICES</u>	including landscaping & staff parking only	\$ 15,800,000	to \$ 22,800,000
4. <u>ASSOCIATED PROJECT COSTS:</u>	including Architectural, Engineering, Legal Fees, soil test, surveys, etc. (approx. 10% of Construction Cost)	\$ 100,000	to \$ 300,000
		\$ 1,590,000	to \$ 2,310,000

### TOTAL CAPITAL COST RANGE

\$20,890,000 to \$33,685,000

### OPERATING COST (calculated in 1979 dollars)

1. ADMINISTRATION		\$ 175,000	to \$ 200,000
2. PROMOTION		\$ 80,000	to \$ 90,000
3. BOX OFFICE		\$ 80,000	to \$ 90,000
4. GENERAL BUILDING MAINTENANCE		\$ 215,000	to \$ 240,000
5. EQUIPMENT OPERATION REPAIR & MAINTENANCE		\$ 200,000	to \$ 350,000

### SUB TOTAL

\$ 750,000 to \$ 970,000

### \*6. MUNICIPAL TAXES

\$ 400,000 to \$ 430,000

### TOTAL ANNUAL OPERATING COSTS RANGE

\$ 1,150,000 to \$ 1,400,000

Note variable operating costs related to specific events will be deducted from potential revenues.

\* See Comments re: Municipal Taxes

Chart No. 1





## THE RANGE OF CAPITAL AND OPERATING COSTS

### GENERAL

The Range of Capital and Operating Costs as outlined on Chart No. 1 have been divided as follows:

#### Capital Costs:

- . Land Value
- . Estimated Building Costs
- . Estimated Site Services Cost
- . Estimated Associated Project Costs

#### Operating Costs:

- . Administration
- . Promotion
- . Box Office
- . General Building Maintenance
- . Equipment Operation Repair & Maintenance
  
- . Municipal Taxes

### LAND VALUES

- . The land values and site sizes have been taken from information contained in the Administrative Committee's Report on the Coliseum, and further information received from the Real Estate Department concerning the estimated cost of business disruption and business relocation cost.

It was felt that this data was sufficiently accurate for purposes of this Study.



Land costs have been related directly to the suggested value of the four sites in the downtown area. These sites include:

- . Site No. 6 - Phase 6, Lloyd D. Jackson Square
- . Site No. 7 - The west side of Bay Street North between Market Street and York Street
- . Site No. 13 - Northwest corner of Merrick Street and James Street North
- . Site No. 14 - Northwest corner of Cannon Street North and James Street North

Details of these sites are included in the Administrative Committee's Report. These areas represent an interesting cross section of potential sites in that they involve varying degrees of public and private ownership, bare land vs. land occupied by existing businesses and business structures, and a variety of zoning restrictions to be resolved.

The value of Site No. 7 has been adjusted to reflect the estimated value of the entire site including the former Eaton's warehouse building presently occupied by the Post Office.

The value of Sites 13 and 14, have been revised to reflect estimated cost of business disturbance and relocation costs.

The Coliseum may require slightly more or less land than presently shown for the various sites. However, all sites have some flexibility for expansion or contraction. The actual site size requirements will depend on the specific design of the building and its vehicular access and exit requirements.

It should be noted that site size and land values vary considerably for the four sites.

- . Sites 7, 13 and 14 require re-zoning which will necessitate O.M.B. approval.
- . Site 7 may require the demolition of an existing structure presently rented to the Post Office.
- . Sites 13 and 14 require expropriation of existing businesses. The estimated cost of expropriation has been included in the value placed on these lands.





- . Tax losses may or may not occur to the City if a Coliseum is located on any one of these sites. Proposed Ontario Property Tax Reform legislation could mean that the Coliseum is taxable.
- . Site 13 includes a premium site cost for the relocation of an existing sewer.
- . C.C. Parker & Associates Ltd. have checked the existing available information concerning sub-surface soil conditions for the four sites. No unusual conditions appear to exist which could lead to a premium cost for building foundations.

As there is such a variance in the estimated value for these sites, no attempt has been made to suggest an average value. The final cost for any of these sites will, of course, be determined through negotiation. However, the values established for the sites are useful for comparative purposes and in assessing the approximate total Capital Cost of the Project.





## SITE ANALYSIS

### COMPARISON OF LAND VALUES AND SITE SIZE

	<u>TOTAL AREA</u>	<u>ESTIMATED VALUE</u>
Site No. 6 * Lloyd D. Jackson Square Phase 6 - S.E. Corner of Bay & Merrick Street	4 acres or approximately 174,000 sq. ft.	a) \$3,400,000  b) it may be possible to purchase for approximately \$175,000.
Site No. 7 100 Market Street Site plus City properties - S.W. Corner of York & Bay Street	4.96 acres (including road)	\$4,759,000 (includes value of the former Eaton's warehouse building)
Site No. 13 ** North side of Merrick Street between James St. North and Park Street	5.5 acres (including part of McNab St. area - 222,000 sq. ft. excluding McNab St. area)	\$7,775,000 plus \$500,000 for sewer relocation
Site No. 14 ** West Side of James Street between Merrick St. & Cannon St. West	5.43 acres (including part of Vine St.)	\$6,600,000
* The site numbers refer to references established in the City of Hamilton Administrative Committee's Report on the Coliseum.		
** The value established for these sites includes an estimate of the business disturbance and relocation cost.		
The information included on this Chart was obtained from the City of Hamilton Administrative Committee Report and contact with the Real Estate Department for the City of Hamilton.		



## BUILDING CONSTRUCTION COST

The building construction cost has been calculated on the basis that construction would start immediately - November 1st - and be completed in 18 months. Although this schedule is not possible, it is also not possible to predict at this time how long the site selection, O.M.B. approval and the design process might take.

However, the correlation which exists between the start of construction, its completion and the commencement of Operating Costs and Revenues would remain constant.

Therefore, assuming cost escalation will equally affect Capital and Operating Costs as well as potential Revenues, the relationship between these costs will remain constant.

It is of interest to note that construction costs have not escalated at above the rate of the Consumer Price Index. They have, in fact, over the last five years risen at a slightly lower rate.

The range of Capital Cost has been based on a review of similar facilities constructed throughout North America in the last 6 years. The construction capital cost for these facilities has been interpolated to reflect the suggested requirements for a multi-purpose auditorium located in Hamilton. The cost of those facilities not required in the Hamilton Coliseum has been taken out for purposes of comparison. Construction costs of the existing facilities have been upgraded to today's costs (November 1, 1976) and to reflect comparative construction costs in the Hamilton area.

An allowance has been made in the construction cost for all seating, press box accommodation, special scoreboard requirements, audio systems, ice making facilities, special lighting, ice cleaning equipment and all loose furniture. No allowance has been made for special facilities which may be required, if Hamilton were to host the Pan Am Games.

The actual construction cost will be directly related to the quality of the building and its equipment, together with the size of the structure and its specific building programme requirements.

The quality of the building and equipment will have a direct effect on energy and utility costs, maintenance and operation, as well as equipment replacement cost.

There has been some debate as to the need for extra parking facilities in the downtown area. This could either take the form of surface parking or a parking structure. This would require further study. However, it





is also assumed that the Capital Cost allocated to parking facilities would be directly related to the potential parking revenues. Under these circumstances, it should not directly affect the Capital Cost of the Coliseum facility.

No attempt has been made to correlate the estimated construction cost for the Yarmon proposal on the 100 Market Street property, or the City's estimated construction cost for the Coliseum, with information gathered on existing completed arenas. The Yarmon proposal and the City's estimates are not based on a completed building project. It would therefore be unrealistic to correlate them with the completed construction cost of other projects.

#### SITE SERVICES

An allowance has been made for connecting the building services to the existing site services. The allowance also includes funds for landscaping and the minimum parking requirements for staff, Coliseum and delivery vehicles.

An allowance for the premium cost of relocating a sewer through Site No. 13 has been carried in the Land Cost for this site.

No allowance has been carried for extra public parking, as it has not been determined how much, if any, extra public parking, would be required in the downtown area.

There is a considerable range in the estimates for the Site Services due to the variety of sites being considered.

#### ASSOCIATED PROJECT COSTS

The professional fees of Architects, Engineers, Lawyers, Cost Consultants and Special Consultants, together with the cost of surveys, soil tests, public relations, models, etc. have been carried in this amount.

The costs have been based on the minimum suggested Fee Schedules for Architects and Engineers. An allowance has been made for cost, legal and special consultants, as well as surveys, soil tests, public relations, etc.

It is estimated that these costs would amount to approximately 10% of the construction cost.





## PROJECTED ANNUAL OPERATING COSTS

The annual operating costs projected in this brief report have been prepared at an early stage of the Woods, Gordon & Company study of potential revenues and financial operating data. They represent preliminary figures only and are based primarily on information gathered through telephone interviews with the managers of a number of recently constructed, publicly owned multi-purpose arenas in Canada and the United States. Since many of the facilities contacted are operated in conjunction with other civic enterprises, considerable judgement is required to interpret the operating costs collected into terms compatible with the proposed Hamilton situation. Clearly many of the operating costs will relate to the type and level of activities conducted in the Coliseum. Without having completed our analysis of the potential market we have made certain assumptions which may be altered through further refinement.

It should also be stressed at the outset that the operating cost projections presented in this report do not include any provision for debt servicing costs to be borne by the City. Such projections will, of course, depend upon the degree of financial participation that may flow from the Federal and/or Provincial Governments, government agencies or private sources.

In order to estimate annual operating costs, it is essential that the proposed method of operation of the coliseum first be considered carefully. Most publicly owned multi-purpose arenas in North America are operated primarily as rental facilities available to local sports franchise holders and touring show promoters. It is these outside people who customarily look after the actual promotion and staging of the particular event for which they have contracted to rent the facility. Prominent among the clauses in most rental contracts is the requirement that the team or promoter will reimburse the arena management for those incremental costs (such as ticket takers, ushers, extra security, special equipment rental, etc.) incurred for the purpose of staging his attraction. Projection of costs of this nature cannot be estimated until we have completed our analysis of the potential market for attractions for the Coliseum and have developed a typical annual program of events. However, since such costs are recoverable from the team or promoter, they really represent an offset to the revenues that will be generated and may therefore be excluded from consideration of annual operating costs from the standpoint of cost to the City.

We have assumed that the Hamilton Coliseum will be operated on a similar basis as most other publicly owned facilities of a similar nature in Canada and the United States. In addition to the factors discussed above, the principal features of such operation as they influence operating costs are:

1. The numbers of permanent employees of the Coliseum will be held to the minimum required for effective general operation. Temporary staff will be hired for specific events only and the cost will be charged back to the parties staging those events.



2. In addition to use of the facility, the only other service which will be covered by the basic rental rate will be general box office staff services.
3. Operation of concessions within the facility will be tendered to outside concessionaires. Therefore there is no cost to the Coliseum for operating such concessions.
4. Since there will be no spectator parking provided, there is no cost for operating parking facilities.
5. Although, it appears that significant economies in administration costs may be possible through joint administration with other City owned or operated facilities (such as the new Convention Centre, Ivor Wynne Stadium, and Hamilton Place) we have assumed a completely separate administrative group for the Coliseum for purposes of generating these preliminary operating costs.
6. These operating cost estimates provide for the significant promotion costs which our early market analysis work indicates will be necessary to achieve profitable occupancy levels. Promotional efforts would be directed toward sports leagues, show promoters, booking agents and promotion of the facility generally throughout the southern Ontario and border state market area.
7. Realty taxes will be levied on the Coliseum even if it remains municipally owned. This requirement assumes that the Ontario municipal tax reform proposals now being considered by the Blair Commission become law by 1979. Application of the average 23 mill rate, calculated for Hamilton by the City Treasurer, to the projected capital cost results in annual realty taxes on the Coliseum in the area of \$400,000, a figure which, in our opinion is much too high. However, since these costs actually represent municipal tax revenue we have shown them after all other costs as they truly represent nil cost to the City.

The attached operating cost estimates relate to the year 1979, the first complete fiscal year in which it is reasonable to assume the Coliseum could be in full operation.

- a) Administration includes the salaries and benefits for a General Manager and office staff as well as insurance costs, professional fees and all general office expenses.
- b) Promotion consists of the salaries and benefits of a Promotion Manager and support staff plus his budget for advertising, promotion, travel and entertainment.
- c) Box Office costs are comprised of staff salaries of permanent employees.
- d) General Building Maintenance includes the cost of a Building Superintendent and support staff, general operating supplies and security.





- e) Equipment Operation, Repair and Maintenance covers the cost, including permanent skilled technician wages, of maintaining all mechanical, electrical, sound and heating and air conditioning systems in good working order. It also includes the cost of fuels and utilities to operate these systems.



HAMILTON COLISEUM

PRELIMINARY ESTIMATE OF FIXED OPERATING COSTS FOR  
FIRST FULL YEAR OF OPERATION- 1979

	<u>Range of Costs</u>	
	<u>High</u>	<u>Low</u>
Administration	\$ 200,000	\$ 175,000
Promotion	90,000	80,000
Box Office	90,000	80,000
General Building Maintenance	240,000	215,000
Equipment Operation, Repair and Maintenance	<u>350,000</u>	<u>200,000</u>
Sub-Total	970,000	750,000
Municipal Taxes	<u>430,000</u>	<u>400,000</u>
Total	<u>\$1,400,000</u> =====	<u>\$1,150,000</u> =====





## SUMMARY

It may be possible to narrow down the Capital and Operating Cost Range when the potential revenues have been determined. It will be possible then to establish the relationship between potential Revenues on the one hand, and the Operating Costs, together with the amortized Capital Cost on the other hand.



## ANALYSIS OF EXISTING COLISEUM CAPITAL COST DATA

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### INTRODUCTION

As is normal for Capital Cost input to a Feasibility Study of this type, projections are based on historical data gathered from recently tendered/built projects of similar function and capacity to that contemplated for Hamilton.

It is important to assemble, analyze and adjust this data in a consistent manner. Equally important is that the sampling of the historical projects should be as wide as possible. Time constraints precluded an in-depth survey but, as is described elsewhere in this study, a final sample of some six buildings has been taken and their data examined and extrapolated.

Initially 20 coliseum projects were reviewed on the basis of data gathered by the Team. These projects included a variety of sports complexes constructed in the last decade with seating varying between approximately 10,000 and 20,000 seats.

This list was then narrowed down to 10 coliseums which had been constructed in the last six years, had approximately 15,000 seats and were essentially multi-purpose coliseums, rather than arenas or units forming part of larger complexes.

Consultants, Contractors and Administrators connected with these 10 coliseums were then contacted and detailed cost and building data assembled.

Insufficient cost data was available on four of the projects, and consequently the list was narrowd down to six coliseums.

These projects represent a cross section in that with the exception of one project all were constructed within the last five years and the majority within the last three years. The seating capacity ranges from 14,300 to 16,500 seats. All are multi-purpose coliseums.

The larger sampling would have been preferable, but the time limitations precluded this. However, we will continue to gather data.



## DATA

Responses to a standard questionnaire have been analyzed, collated and reported on the attached chart which, together with the following commentary, is self-explanatory:

### Col. 4 - Construction Cost:

The net building as tendered, exclusive of site development costs and professional fees, but inclusive in some instances as noted, of seats, scoreboard and sound systems. As far as could be ascertained, no abnormal sub-soil nor foundation conditions are included in reported costs.

### Col. 5 - Furniture and Equipment:

Statement whether or not seats, scoreboard and sound systems were included in construction cost. If not, they are separately noted. If not and were not available, they are estimated and identified by parenthesis.

### Col. 6 - Construction Management Time Saving:

If a form of fast-tracking or construction management for the sample project was adopted, then simulation of the slower traditional lump-sum contract has been made on the premise that CM fees are expended to save escalation, which is conservatively assumed to equal 1 1/2 times fee charged. An amount, therefore, is calculated to reasonably simulate the add-on applicable.

### Col. 7 - Stipulated Sum Construction Cost:

This is the sum of columns 4, 5 and 6.

### Col. 8 - Local Design Factor:

Since projects are in seven states/provinces, it is obvious that local geography and climatic conditions affect design and correspondingly, costs may be expected to vary. These differences are recognized, but are considered at this point in time to be trade-offs.

### Col. 9 - Escalation Index to October 1976:

Estimate cost escalation factor to simulate the probable cost on location, if tenders were opened in October, 1976, with construction commencing on November 1, 1976. Factors were obtained for each location from the local design consultants.





Col. 10 - Local to Ontario Index:

It is necessary to compare costs on an equal basis geographically. Therefore, to transpose, say, New York Coliseum cost to Hamilton, a composite factor is applied to its local cost to discount for wage, material and other cost differences existing between the two centres. The factors are necessarily coarse but, as far as can be determined from single source research, are reasonably representative for 1976/77.

Col. 11 - Hamilton Cost:

The end result of normalizing to a Hamilton location obtained through traditional design and lump-sum tendering procurement procedures. Combination of column 7, multiplied by columns 9 and 10.

Col. 12 - Provision for Energy Conservation:

Research into the sample projects revealed that none had taken into account energy conservation to any significant degree, probably due to being designed prior to the energy crisis. General speaking energy conservation measures imply carefully considered design improvements which can result in heavier Capital Cost expenditures. These, however, have calculable benefits in the form of reduced ongoing operational costs for the life of the project.



## HAMILTON COLISEUM FEASIBILITY STUDY

## SECTION - BUILDING CONSTRUCTION COST - HISTORICAL DATA TABULATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Project	Location	Tender Date	Const. Cost	Furniture & Equipment		Construction Management Time Saving	Stipulated Sum Const. Cost	Local Design Factor	Escalation Index to October 1976	Local-Ont. Index	Hamilton (Equip. Sum) Const. Cost	Energy Price Measures	Fixed Plant Number	Estimated Completion	
				Sound	Scoreboard										
Kenper	Kansas	April 1973	\$ 13.4 M	Incl.	\$(0.25 M)	Incl.	\$ 0.70 M	\$ 14.35 M	1.20	1.00	\$ 17.2 M	\$ Not Considered for Present Study	14,300	1,202	Completed November 1974
McNichols	Denver	July 1973	10.4 M	Incl.	\$(0.25 M)	(0.15 M)	0.75 M	11.55 M	1.28	1.07	15.8 M		16,500	958	Completed August 1975
Coliseum	Edmonton	May 1973	14.0 M	Incl.	Incl.	Incl.	0.70 M	14.70 M	1.25	1.00	15.5 M		16,500	1,129	Completed November 1974
Summit	Houston	October 1973	14.4 M	Incl.	Incl.	Incl.	N/A	14.40 M	1.22	1.00	17.6 M		14,906	1,181	Completed October 1975
Nassau Vet.	New York	1968	16.0 M	0.68 M	1.0 M	Incl.	N/A	17.68 M	2.00	0.82	29.0 M*		14,500	2,000	* Completed 1972
Market Sq.	Indianapolis	July 1971	16.5 M	Incl.	Incl.	Incl.	0.50 M	17.00 M	(1.40)	0.96	22.8 M		16,040	1,421	Completed September 1974
Riverfront	Cincinnati	October 1973	Information Incomplete												Completed September 1975
														* Energies supplied from Central Plant	
Local Information / Conditions															Hamilton Information / Conditions
															* The construction cost of this project exceeds the other projects by a considerable margin. Further investigation is required to assess the difference. It is therefore not being used in determining the range for the capital cost at this time.





## C O N S U L T A N T   T E A M

.   MOFFAT MOFFAT & KINOSHITA	Architects & Planners
.   C.C. PARKER & ASSOCIATES LTD.	Consulting Engineers
.   MOFFAT ENGINEERING LIMITED	Consulting Engineers
.   HANSCOMB ROY ASSOCIATES LTD.	Cost Consultants
.   WOODS GORDON & CO.	Management Consultants

October 22, 1976





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